



TiffanyScreens

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Vers. 5.0.0.1 (Updated Jan. 24, 2013)



The term “democracy” was coined in ancient Athens in the 5th century BC. All Athenian citizens were free to speak in the Assembly.

Tiffany Screens is a presentation tool, able to capture the content of the presenter's screen and send it to multiple other computer screens at the same time. Any computer can seamlessly become the presenting computer, no matter if connected wirelessly or through an Ethernet cable. The self-contained solution does neither require nor use a server. It automatically detects all computers on a local network, running the TiffanyScreens software and those computers can watch the presentation projected onto their screens. Best of all, with a single button click, any computer can switch from watching into presenting mode.

Yesterday ...

Sharing the screen content with others during a meeting usually required to connect a projector to the presenter's laptop computer. In a lengthy process, the Laptop's screen resolution and refresh-rate needed to be manually adjusted, to synchronize with the projector. The adjustment procedure was often followed by a single lecture style presentation, featuring slides being projected hugely magnified onto one of the meeting room's walls.

Today ...

You download and install TiffanyScreens™

Tomorrow ...



TiffanyScreens allows you to share presentations (or any screen content) with your peer group, without requiring a projector.

Imagine a scenario, where every participant brought a Laptop to a meeting and watched the presentation on that Laptop's display - participants would probably sit on a table facing each other, instead of the wall.

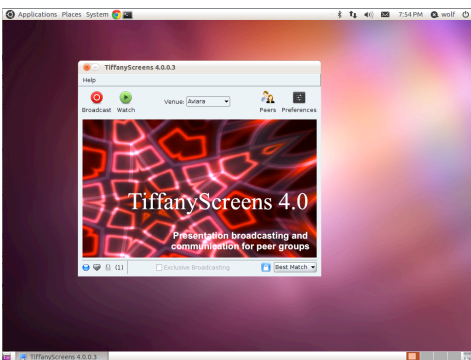
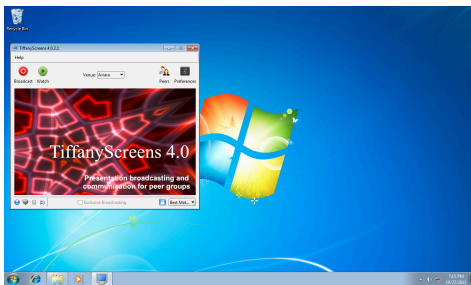
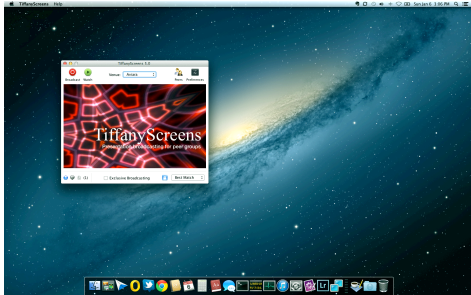
No adjustments are necessary; images are scaled automatically on arrival, to best match the receiver's display-capability. To support lively meetings, everyone participating can, with a single button click, turn his computer into the presenting device.

Technical Requirements

Truly cross platform, Tiffany Screens runs and shares any screen content on Mac OS X, Windows, and Desktop Linux

Minimum run-time requirements

- Intel Pentium or Core Duo or Core i3
- 512 MB of RAM
- 30 MB free disk space



Macintosh OS X

TiffanyScreens requires Mac OS X 10.7.3 (Lion) or later. TiffanyScreens has been tested vigorously on Apple Laptop and Desktop computers, connected wirelessly and through Ethernet cable.

Windows

Tiffany Screens was developed from the ground up with true platform compatibility in mind. It is certified to run on Windows XP (Service Pack 3) and has been tested for compatibility on Windows Vista and Windows 7. Tiffany Screens' Windows distribution comes in form of a standard Windows installer (*setup.exe*), allowing for convenient de-installation through Windows' standard tools.

Linux and Java

Tiffany Screens' pure Java distribution runs on most newer Linux Desktop distributions, with a Java 5.0, 6.0, or 7.0 Runtime Environment (JRE) installed. Oracle for instance provides JRE 6.0 for many hardware platforms and Linux versions; more information about those is available at:

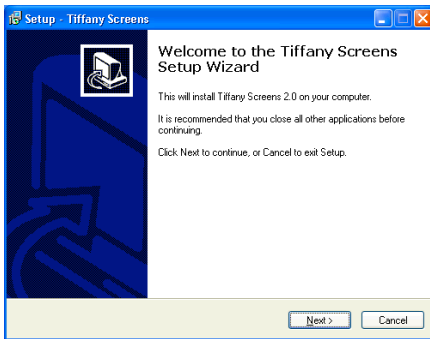
<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

Tiffany Screens should run perfectly fine on any Linux distribution, given that the above-mentioned hardware requirements are met and that a JRE 5.0 or greater has been installed. However, due to the wide variety of available Linux distributions, Linux is not a certified OS.

Installation on Windows

After downloading the TiffanyScreens installable for Windows from TiffanyScreens.com, the installation procedure requires extracting the ZIP archive and executing the installation program setup.exe.

Setup.exe

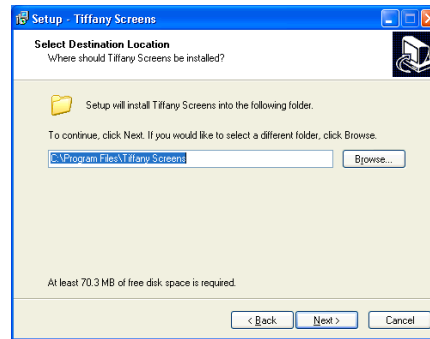


After downloading the TiffanyScreens.zip archive from the TiffanyScreens website at <http://www.tiffanyscreens.com>, the archive needs to be extracted, which will produce the *setup.exe* install program.

Executing *setup.exe* starts a typical wizard style installer, which will eventually lead to the completely installed TiffanyScreens application.

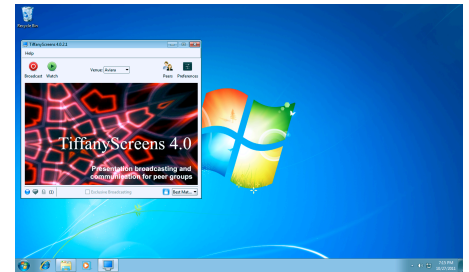
After the installation has been completed, both files, *TiffanyScreens.zip* as well as *setup.exe*, can be deleted from the system.

Destination Location



During the installation, several choices can be made. However, the defaults should work perfectly fine for most users.

Application Shortcut

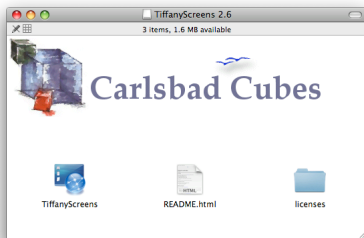


The installation finishes with the option to display the *readme.html* file and will put a shortcut for launching TiffanyScreens on the user's Desktop.

Installation on Mac OS X

After downloading the TiffanyScreens installable for Mac OS X from TiffanyScreens.com, the installation procedure requires opening the DMG archive and coping the TiffanyScreens application into the user's Applications folder.

Disk Image (DMG)



After downloading the *TiffanyScreens.dmg* disk image archive from the TiffanyScreens website at <http://www.tiffanyscreens.com>, the disk image simply needs to be opened, which will reveal the Tiffany Screens application, the *readme.html* file, and a folder container license related documents.

To complete the installation, the TiffanyScreens Application icon needs to be copied (dragged) into the user's *Applications* folder.

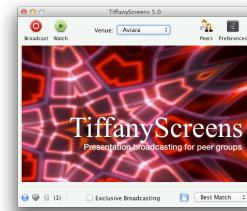
After the installation has been completed, the disk image file (*TiffanyScreens.dmg*) can be closed and deleted from the system.

Application Folder



Coping the TiffanyScreens Application into the the user's *Applications* folder is as simple as dragging the TiffanyScreens icon from the disk image into the *Applications* folder.

Running ...



A double click on the TiffanyScreens icon will launch the application and will work for most users in most network environments without modifying any of the default settings or configuration details.

Installation on Linux & Java

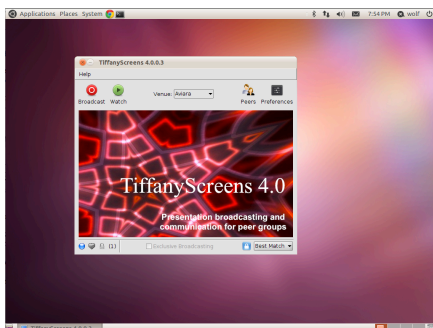
Installation on Linux requires a pre-installed Java 5.0 compatible Runtime Environment (JRE). In most cases the installation should be successful and TiffanyScreens launches and works perfectly fine. However, due to Java compatibility issues some additional work could be required when running TiffanyScreens on a non-certified OS or platforms.

Linux



Like aforementioned, TiffanyScreens work perfectly fine on most newer Linux Desktop distributions, as long as hardware requirements are met and a Java 5.0 or better runtime environment was installed. Running TiffanyScreens on a system where those requirements are all met is as simple as downloading the *TiffanyScreens.jar* file from the TiffanyScreens website at <http://www.tiffanyscreens.com>, and executing it.

Most of the TiffanyScreens QA on Linux has been done on PCLinuxOS, which comes with Java 6.0 pre-installed.



Java



Any system with a compatible Java 5.0 or better runtime environment meeting the above mentioned hardware requirements should be able to run TiffanyScreens.

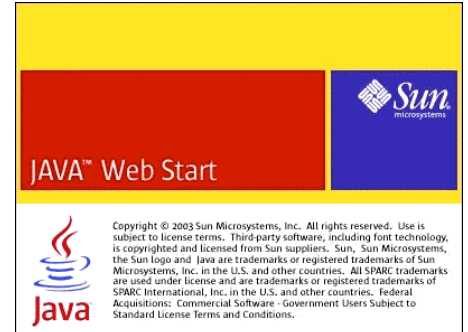
Simply download and run the TiffanyScreens.jar available at <http://www.tiffanyscreens.com>,

The jar file is a fully contained application, which does not depend on any 3rd party libraries to be available in the *CLASSPATH*. If the operating system is not set up to launch jar files directly, executing

```
java -jar ./TiffanyScreens.jar
```

usually does the trick.

Java Web Start



TiffanyScreens can also be launched directly from the TiffanyScreens.com website, via the *Java Network Launching Protocol*. However, this requires that a Java 5.0 or better runtime environment has been pre-installed on the machine trying to launch the application.

If hardware requirements are met and a Java 5.0 or greater runtime environment was installed, following this link will launch TiffanyScreens on the client computer:

<http://www.tiffanyscreens.com/v400/TiffanyScreens.jar>

Using Tiffany Screens

Tiffany Screens is a presentation tool, able to capture the content of the presenter's screen and send it to multiple other computer screens at the same time. It automatically detects all peers on a local network, which can watch the presentation projected onto their screens.

Broadcasting



Clicking the toolbar's **Broadcast** button puts the computer into screen-sharing mode. Every peer that is in watching mode and also has the same *venue* selected, will start seeing the broadcaster's screen.

While in broadcasting mode, TiffanyScreens' user interface is reduced to just the toolbar and statusbar.

The activity indicator (LED) in the statusbar has changed from blue (idle) to green (connecting) and when there are watching peers, the LED changes to red, indicating that screen-captures are being sent. Pressing the [esc] key or clicking the red stop button, stops broadcasting and returns TiffanyScreens into *idle* mode. Since there can only be one broadcasting peer per venue, the broadcasting button may be disabled at times, indicating that another peer is already sharing his screen content. However, as soon as he stops broadcasting, the broadcasting button become enabled again.

Watching

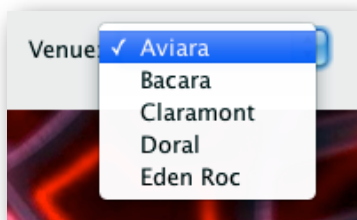


Clicking the toolbar's **Watch** button puts TiffanyScreens into screen-receiving mode. As soon as a peer, who has selected the same *venue*, starts broadcasting, the broadcaster's screen content will be displayed in a size-adjusted window.

When entering watching mode, the activity indicator (LED) in the statusbar changes from blue (idle) to green (connecting) and then orange, indicating that screen-captures are being received.

Pressing the [esc] key or clicking the red stop button at the far lower-right in the statusbar, stops watching and returns TiffanyScreens into *idle* mode.

The broadcaster's screen resolution may be very different from the receivers' and TiffanyScreens computes a best-match scaling factor for each receiver individually. However, a dropdown listbox in the statusbar, allows to keep TiffanyScreens inside a predefined window, which is useful when working inside other applications while watching a presentation.



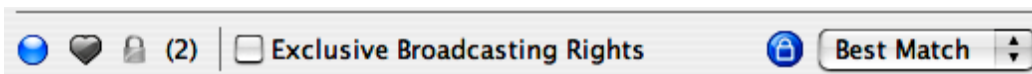
Venues

Venues represent the concept of virtual conference rooms. Only peers who have selected the same venue can share their screen content.

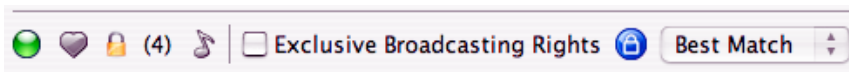
TiffanyScreens supports five *venues*, meaning up to five separate screen sharing session may occur at the same time.

Statusbar

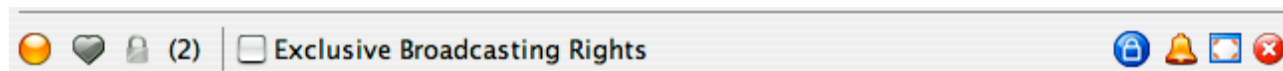
The statusbar, located at the bottom of Tiffany Screen's application windows, has an activity indicator LED on the far left, showing TiffanyScreens' current state



Statusbar, while idle



Statusbar, while broadcasting

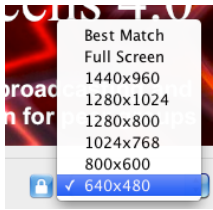


Statusbar, while receiving

-  blue - idle
-  green - connecting
-  red - sending
-  orange - receiving
-  The red/grey alternating *heart* icon indicates that a heartbeat is sent to the to peer group, informing about this peer's state
-  An enabled *lock* icon indicates that the presentation broadcasted in the currently selected *venue* is password protected
-  The number in parentheses shows the current size of the peer group.
-  An enabled *signal* icon (only visible while *broadcasting*) indicates that a watching peer has signaled the broadcaster. Hovering the mouse pointer over the signal icon will reveal the signaling peer's name.
-  Clicking the *lock* button allows entering a password, to either password protect a screen presentation or to watch a protected presentation.
-  The *bell* button (only visible while *watching* a presentation) allows to send a signal to the broadcasting peer.
-  Clicking the *rotate* icon rotates the received image 90 degrees .
-  The *full-screen* button (visible while *watching* a presentation) switches TiffanyScreens into full-screen mode. A received presentation is now displayed using the full screen, without showing any of Tiffany-Screens' window-decorations. A mouse click or pressing any key will return into a windowed mode.



The *stop* button (only visible while *watching* a presentation) will return TiffanyScreens from receiving into *idle* mode.



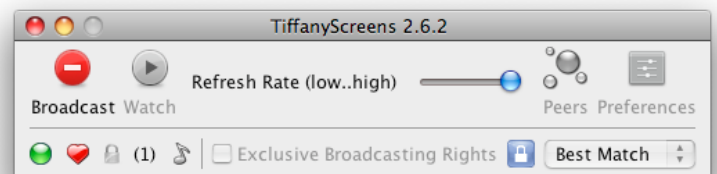
Screen-Resolution

TiffanyScreens captures a screen presentation at the source in the best possible resolution and transforms it at the receiving end to reproduce the best quality. The resolution selector (visible while *idle*) allows forcing TiffanyScreens into transform a received presentation into the selected resolution before displaying it.

Refresh-Rate

When broadcasting, TiffanyScreens captures your screen contents compresses it and sends it to all watching peers in your venue. Your computer does all that besides running your presentation software like Keynote or Powerpoint and all this put a significant load on your machine, which can drain your laptops battery fast or slow the application you want to demonstrate down.

If you find this to be an issue, please make use of the Refresh-Rate Slider, available while broadcasting. When in the right-most position (default) TiffanyScreens will broadcast as many images as possible. On its leftmost position, TiffanyScreens will update your watching peers only every 3 to 5 seconds, saving battery power and making more processor cycles available to other applications running on your machine.



Password Protecting a Presentation

By default any peer is allowed to watch a presentation at the currently selected venue.

For cases where this behavior is undesirable, the broadcasting peer can choose to password protect his presentation, by clicking the **lock** button and entering a password. Any peer who wants to watch the presentation will now be requested to enter the password before receiving any data. Setting a password works at any time, even if the presentation is already in progress. To remove the password protection from a presentation, the **lock** button needs to be clicked again, which allows to remove the password.



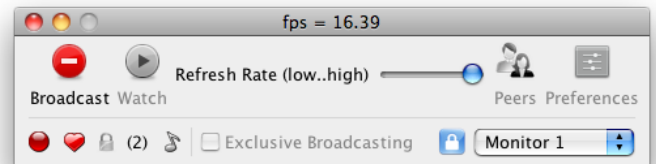
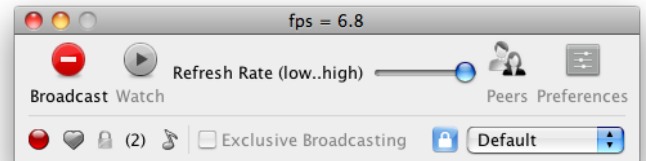
Exclusive Broadcasting Rights

Exclusive Broadcasting is one of the few features only available to **licensed** users. Clicking that checkbox gives exclusive broadcasting rights to the users, in any currently selected *venue*. This means that if a licensed user has selected this checkbox, no unlicensed user is able to broadcast his screen content while in the same venue; a presentation in progress by an unlicensed user would be stopped. If you haven't guessed it already, teachers have asked us to implement this feature.

Native Screen Capture on Mac OS X

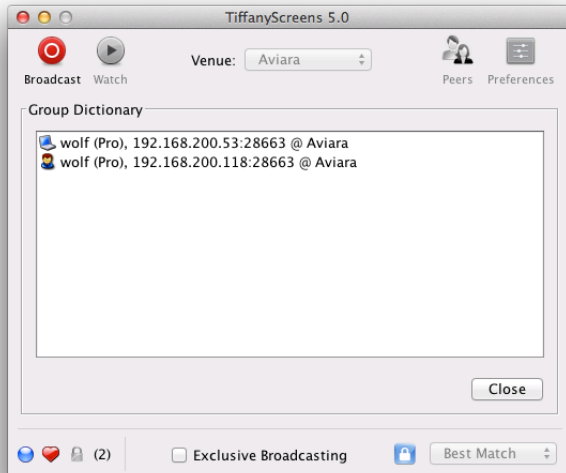
TiffanyScreens taps into native libraries and the results are stunning. Instead of using Java's slow screen capture support, TiffanyScreen now uses Mac OS X native foundation to capture and send up 30 frames per second, marking a three-fold increase. Using native OS functionality also allows the selection of the monitor to capture, which may become important, if you have a 2nd monitor connected to your laptop.

By default and on systems where native support is not yet available, TiffanyScreens still uses Java's inherent screen capture functionality. A small drop-down on the bottom-right, available when broadcasting allows the presenter to select native screen-capturing, and also to select the source monitor. Switching to native, taxes the presenter's machine a little less and also improves the experience for the watching audience, e.g. by showing smoother transitions.



Peer Groups

Everyone on your local computer network (no matter if connected wirelessly or using a wired connection) who is running TiffanyScreens is considered a peer.



Group Directory

Clicking the toolbar's *Peers* button shows the Peers-Panel, which lists all computers currently running the TiffanyScreens application. The peer's name, IP address, and currently selected *venue* are shown. An icon indicates the state a peer currently is in.



Represents the *local* peer

Peer is currently *idle*, neither watching nor broadcasting a presentation

Peer is currently *broadcasting* his screen content

Peer has the *watching* mode selected

Who is doing what and where ...

The Peers-Panel allows every peer to find out who is currently in the peer group, i.e. running TiffanyScreens.

Only TiffanyScreens related information is displayed - for instance what *venue* has been selected or who is currently broadcasting a presentation where.

Anything else, like what other applications are currently running, is not displayed nor is this information available to TiffanyScreens.

Configuration

Most users will be able to run Tiffany Screens, without ever having to look at the Preferences Panel. However, if Tiffany Screens is run on a “multi-homed” computer (has multiple active network interfaces) or connects to the local area network through a VPN, some adjustments may be required.

Preferences

TiffanyScreens detects required configuration settings like the user name and the IP address automatically. The system defaults are chosen to work for most users in a usual local area network environment.

Network

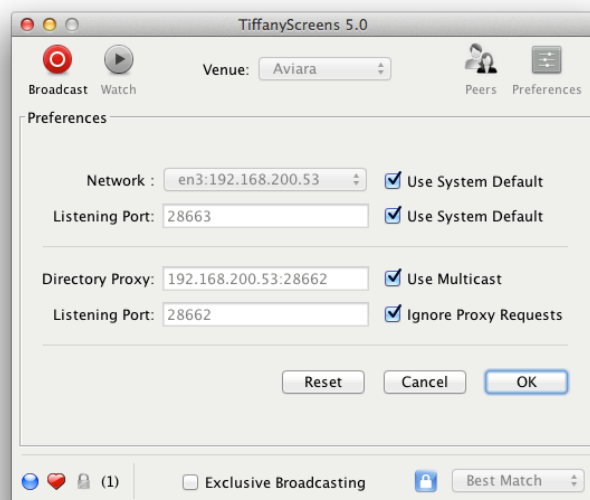
If the displayed network adapter name or IP address doesn't look right, then deselecting the *Use System Default* checkbox next to it, will allow to select from a list of all network adapter / IP address combinations found on the system.

Listening Port

The listing port is the TCP/IP port, on which TiffanyScreens receives information from a broadcasting peer. In case a firewall is deployed and active on the peer's computer, this listing port (a.k.a. server port) needs to be allowed in the firewall's profile. The listing port is only used to receive screen content from a broadcasting peer and may be different for every peer. Again, deselecting the *Use System Default* checkbox will allow changing the port to any port in the range from 1024 to 65535.

Directory Proxy

About once per second, every peer *multicasts* information about the state it is in, like the selected *venue* for instance. To allow all other members of the peer group to receive this information, multicasting has to be enabled on the underlying network infrastructure. Generally, this is not a problem on local area networks, where computers and networking devices like hubs, switches, and routers support multicasting. However, data packets with a destination address in the multicast address range are dropped by WAN or Internet routers as well as by some hardware and software VPN solutions.



Network :	en3:192.168.200.53	☒ Use System Default
Listening Port:	28663	☒ Use System Default
Directory Proxy:	192.168.200.53:28662	☒ Use Multicast
Listening Port:	28662	☒ Ignore Proxy Requests

To allow TiffanyScreens to work in environments where multicasting is not available for all or some peers, a *Directory Proxy* has been built into Tiffany Screens.

If a computer running TiffanyScreens is connect to a local area network, where multicasting is enabled, the *Use Multicast* checkbox should be selected. Only if a computer running TiffanyScreens does not

appear in the Peers-Panel of another user, should this checkbox be un-selected and the host name (or IP address) and port number of a Directory Proxy be entered.

Enabling the TiffanyScreens' built-in Directory Proxy

If for all or some TiffanyScreen users multicasting seems to be disabled and the *Use Multicast* checkbox was unselected for those users, one designated computer needs to run TiffanyScreens with the built-in *Directory Proxy* enabled.

Network :	en3:192.168.200.53	☒ Use System Default
Listening Port:	28663	☒ Use System Default
Directory Proxy:	192.168.200.53:28662	☒ Use Multicast
Listening Port:	28662	☐ Ignore Proxy Requests

Enabling the *Directory Proxy* mode is as easy as unchecking the *Ignore Proxy Requests* checkbox, which enables another listing port on that computer and is selectable in the range from 1024 to 65535. Again, in case a firewall is deployed and active on the *Directory Proxy*, this listing port (a.k.a. server port) needs to be allowed in the firewall's profile. The listing port is only used to receive status information

from peers that have *multicasting* disabled and are configured to use this *Directory Proxy* instead.

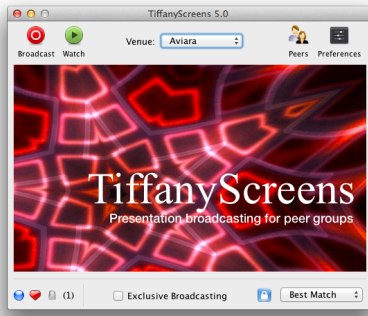
It is usually sufficient, to run a single computer in *Directory Proxy* mode. The *Directory Proxy* should have *Use Multicast* enabled, to communicate the directory information to all peers that kept multicasting enabled.

Network :	en3:192.168.200.53	☒ Use System Default
Listening Port:	28663	☒ Use System Default
Directory Proxy:	192.168.200.53:28662	☐ Use Multicast
Listening Port:	28662	☒ Ignore Proxy Requests

This example shows a Tiffany Screens peer configured with the *Directory Proxy* feature enabled. All peers unable to use *multicasting* should configure this peer's IP and Proxy Listening Port as the *Directory Proxy*:

Tiffany Screens Pro vs Std

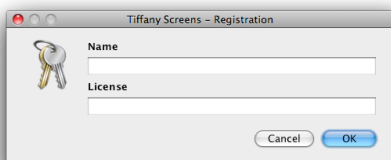
There are only a few differences between the **Pro** (or licensed) and the **Standard** version of TiffanyScreens. However, groups larger than 3 need to have at least one **Pro** peer at their venue.



Pro versus Standard

Tiffany Screens works perfectly fine for smaller groups and is suitable for testing its capabilities in specific networks. However, to broadcast a screen presentation to more than two other peers, at least one licensed peer needs to be in the selected *venue*.

Moreover, only a licensed peer will have the *Exclusive Broadcasting Rights* feature enabled and licensed users will not be effected, if this feature has been selected by any other licensed user.



How to upgrade to Tiffany Screens Pro?

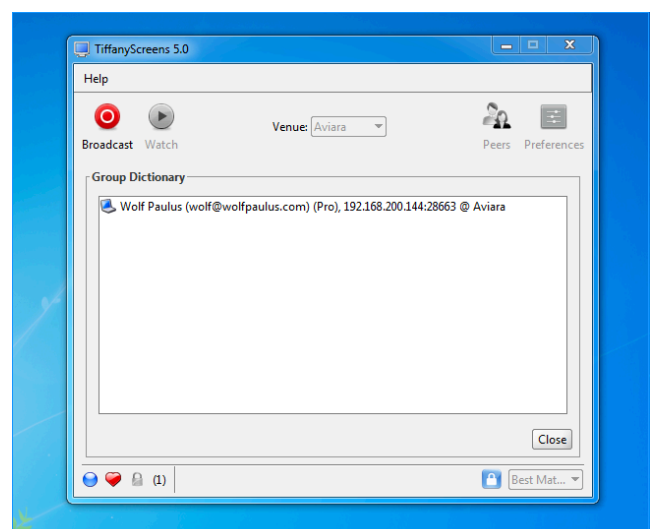
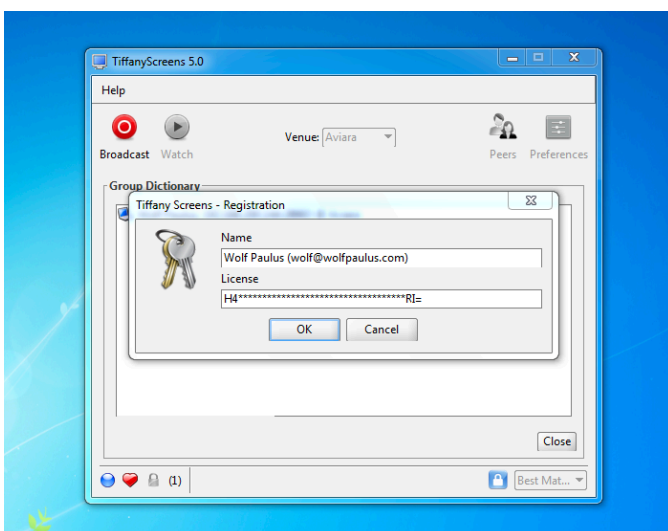
A Tiffany Screens license code is usually received through email and needs to be entered into the application, using the *Registration Dialog* available through Tiffany Screens *Help* menu.

The provided user name and password needs to be entered exactly like it appear in the received email.

To enable TiffanyScreens for larger groups, from 3 to 50 watching peers, at least one Pro (licensed) user needs to be available in the *venue*.

TiffanyScreens Licenses are personal licenses and must not ever be shared or given to other users.

Upgrading to PRO on Windows 7:





TiffanyScreens by Wolf Paulus
Dedicated to Excellence



TECH CASITA

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